

ABSTRACT OF THE DISCLOSURE

An electric discharge machining apparatus has improved responsive drivability and improved machining speed. A tool electrode has its tip end directed to a work piece with a voltage being applied between the tool electrode and the work piece to generate a discharge. A drive shaft is connected with the tool electrode. An electrode driving device has magnetic bearings for moving the drive shaft in three directions including a Z-axis direction that is an axial direction of the drive shaft, a Y-axis direction perpendicularly crossing the Z-axis direction, and an X-axis direction perpendicularly crossing the Y-axis direction and the Z-axis direction, by supplying electric current to electromagnetic portions to control magnetic attractions thereof. A movable coupling is connected with an end of the drive shaft and is movable in the three directions. An electric motor is connected with an end of the coupling for rotating the drive shaft through the coupling.